

CLAIMS

What is claimed is

5 1. An assay procedure for determining the amount of each lipid and/or proportionate amount of each lipoprotein analyte in serum, comprising:

obtaining a volume of serum;

10 obtaining a reaction mixture of an acylating compound having the formula R CO R, and a predetermined amount of perchlorate ion;

15 reacting said volume of serum with said reaction mixture to produce a colored product;

measuring the spectral data for the colored product;

20 applying multiple wavelength detection with multivariate statistical analyses to determine the amount of analyte.

2. The assay procedure of claim 1 wherein the perchlorate ion is present in the acylating compound in a concentration sufficient to form a pectrophotometrically active product with cholesterol.

3. The assay procedure of claim 1 wherein the perchlorate ion is selected from a group consisting of barium perchlorate, zinc perchlorate and perchloric acid.

5 4. The assay procedure of claim wherein the perchlorate ion is selected from a group consisting of HCRO_4 and $\text{Zn}(\text{ClO}_4)_2 \cdot 6\text{H}_2\text{O}$.

10 5. The assay prcedure of claim 1 wherein R is selected from a group consisting of lower alkyl radicals.

15 6. The assay procedure of claim 5 wherein the lower alkyl radical is a methyl alky radical.

7. The assay procedure of claim 1 wherein R_1 is a halogen.

15 8. The assay procedure of claim 1 wherein the halogen is a chloride ion.

9. The assay procedure of claim 1 wherein the spectral data is measured over the entire visible range.

20 10. The assay procedure of claim 1 wherein the spectral data is measure using a fast scanning spectrophotometer.

11. The assay procedure of claim 1 further comprising adding a volume of glacial acetic acid to said colored product prior to measuring the spectral data.

12. The assay procedure of claim 1 wherein the spectral data is measured using
5 simultaneous dual scan wavelength detection.

13. The assay procedure of claim 1 further comprising separating precipitated materials from the colored product prior to measuring the spectral data.

10 14. The assay procedure of claim 11 wherein the spectral data is measured using a spectrofluorimeter.

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